Design and manufacture of agricultural equipments

*354. SHRI S. ANBALAGAN: Will the Minister of AGRICULTURE be pleased to state:

(a) whether Government have taken any steps during the last two years to design and manufacture agricultural equipments which are suitable for Indian conditions and for enabling the farmers to carry out farm operations economically and efficiently;

(b) if so, the details thereof and the success achieved therefrom;

(c) whether the country is still lagging behind many countries in farm mechanisation; and

(d) if so, the details thereof and the steps proposed to be taken by Government in this regard?

THE MINISTER OF AGRICULTURE (SHRI SHARAD PAWAR): (a) Yes, Sir.

(b) The Central Institute of Agricultural Engineering, Bhopal and 23 Centres of All India Coordinated Research Project (AICRP) on Farm Implements and Machinery (FIM) have designed and developed Agricultural Implements and Machinery suitable for small, medium and large farms. A list of farm equipment developed during last two years is given in Statement (*See* below). Use of these equipments result in saving in time, labour, cost of operation and reduction in drudgery.

Feasibility Testing of Farm Equipment developed have also been carried out at Institute/University farms as well as farmers fieled to evaluate and refine the equipments developed.

To popularize the farm equipment developed, front line demonstrations have been carried out by centres of AICRP on FIM and Krishi Vigyan Kendras(KVKs).

Efforts have also been made to make design drawings of some of the agricultural machines using Computer Aided Design (CAD). These drawings can be used by the manufacturer for making the agricultural machines. This would lead to quality manufacturing of machine through research-industry linkage.

Trainings on farm implements have been conducted to familiarize the farmers on use, care and maintenance of different farm equipments. To popularize the farm implements developed the ICAR participated in different exhibitions, melas and demonstration programme.

(c) and (d) As compared to neighbouring Asian countries, India is not lagging behind in farm mechanization and is promoting selective mechanisation. About 250 manual, animal and power operated equipment for land preparation, sowing, interculture, spraying, harvesting and threshing have been developed to cater to small, medium and large farms. The mechanization efforts in the country have been made selectively for crops and their operations keeping in view the prevailing agro-socio-economic aspects. The mechanization in India is through an optimal blend of prevalent power sources i.e., manual, draft animals and mechanical.

India is one of the largest producer of tractors in the world producing about 2.5 lakh tractors annually in the range of 20-75 hp. As of now there are about 3 million tractors in India.

India is also producing about 2000 power tillers, 4 lakhs seed drills, 7 lakhs pumps and 4 lakhs threshers per annum. There are about 7000 small scale manufactures of agricultural implements and about 1 million village artisans.

There is a direct relationship between the farm power availability and productivity. The average farm power availability on Indian farms is 1.36 k W/ha with Punjab having the highest, *i.e.* 4.36 kW/ha.

Efforts have also been made to compile a list of agricultural implements manufacturers. CIAE, Bhopal has brought out a compendium of agricultural machinery manufacturers which have been out on website of Department of Agriculture & Cooperation (DoAC), Ministry of Agriculture.

To promote mechanization, a good number of improved farm implements such as rotavator, pulverizing roller, zero till drill, strip till drill, till planter, sugarcane cutter planter, pneumatic planter, pre-germinated paddy seeder, mat type paddy transplanter, vegetable transplanter, power weeder, aero blast sprayer, self propelled reaper, straw combine, straw bailer, rice straw shopper cum spreader, fertilizer spreader, banana clump remover, self propelled forage harvester, rotary power weeder, power tiller mounted groundnut digger, power operated dehusker cum sheller etc. have been

developed and are being demonstrated and popularized to promote mechanization. About 2 million hectare of wheat has been sown using zero till drill which results in saving of about Rs. 2000-2500/ha. Use of furrow irrigated raise bed planter results in savings of about 30-40% water.

The efforts being made on mechanization of agriculture is need based and farm equipment are developed/adapted only for the crops and their operations where mechanization intervention is necessary to carry out the operations timely with reduced drudgery and higher return to the farmers. Mechanization studies are conducted to identify the gaps and based on the mechanization gaps, equipment are identified for development/adaptation.

Statement

List of Farm Equipment Development Adopted during last Two Years

Sl. No.	Equipment Designed/Developed	Power Source	Achievement/Present Status
1	2	3	4
1.	Self propelled forage harvester	5hp diesel engine	Under commercialization
2.	Self propelled boom sprayer	5 hp diesel engine	Commercialized
3.	Power operated maize dehusker cum sheller	5hp electric motor/ 25 hp tractor	Commercialized
4.	Power tiller mounted orchard	10-12 hp power tiller	Multi-location trials
5.	High capacity pigeon pea thresher	15 hp electric motor/ 35 hp tractor	Under feasibility testing
6.	Power tiller mounted groundnut digger	Power tiller 10-12 hp	Multi-location trials
7.	Tractor mounted multipurpose equipment for sugarcane	35 hp tractor	Multi-loction trials
8.	Tractor mounted vegetable transplanter	35 hp tractor	Feasibility testing
9.	Tractor mounted inclined plate planter with raised bed former	35 hp tractor	Multi-location trials
10.	Rotary power weeder	3 hp engine	Centres demonstrated equipment in large area for different crops
11.	Self propelled rice transplanter	5 hp diesel engine	Multi-locational trials

1	2	3	4
12.	Tractor mounted Zero till seed drill	35 hp tractor	FLD commercialization
13.	Self propelled vertical conveyor reaper	5hp diesel engine	Commercialized
14.	Flail type fodder harvester cum chopper	35 hp tractor	Under commercialization
15.	Rice straw chopper cum spreader	45 hp tractor	Under commercialization
16.	Light weight power tiller	5 hp diesel engine	Multi-location trials Ready for commercialization
17.	Self propelled 10-row rice seeder	5 hp diesel engine	Multi-location trials
18.	Tractor mounted 3-row rotary weeder	35 hp tractor	Multi-location trials
19.	Tractor mounted banana clump remover	35 hp tractor	Multi-location trials
20.	Power tiller mounted earthing cum fertilizer applicator	Power tiller 10-12 hp	Under design refinement

Prototypes Manufactured during last two years
(Manually operated: 1556; Animal drawn: 55, Power operated: 156; Total: 1767)

Frequency of Bhubaneswar-Yeswantpur-Bhubaneswar Express

*355. SHRI B.J.P. PANDA: Will the Minister of RAILWAYS be pleased to state:

(a) whether it is a fact that Bhubaneswar Citizens' Forum has requested the railway authorities to increase the frequency of the Bhubaneswar-Yeswantpur-Bhubaneswar Express from once to twice a week, due to heavy rush of traffic; and

(b) if so, the status of the proposal and the time-frame within which it would be agreed to?

THE MINISTER OF RAILWAYS (SHRI LALU PRASAD): (a) Yes, Sir.

(b) Increase in the frequency of 2845/2846 (Old No. 8415/8416) Bhubaneswar-Yeswantpur Express has been examined but not found feasible at present due to operational constraints.